

Shell length variations of the bivalve *Ennucula tenuis* in the northeastern Chukchi Sea, 2008–2013

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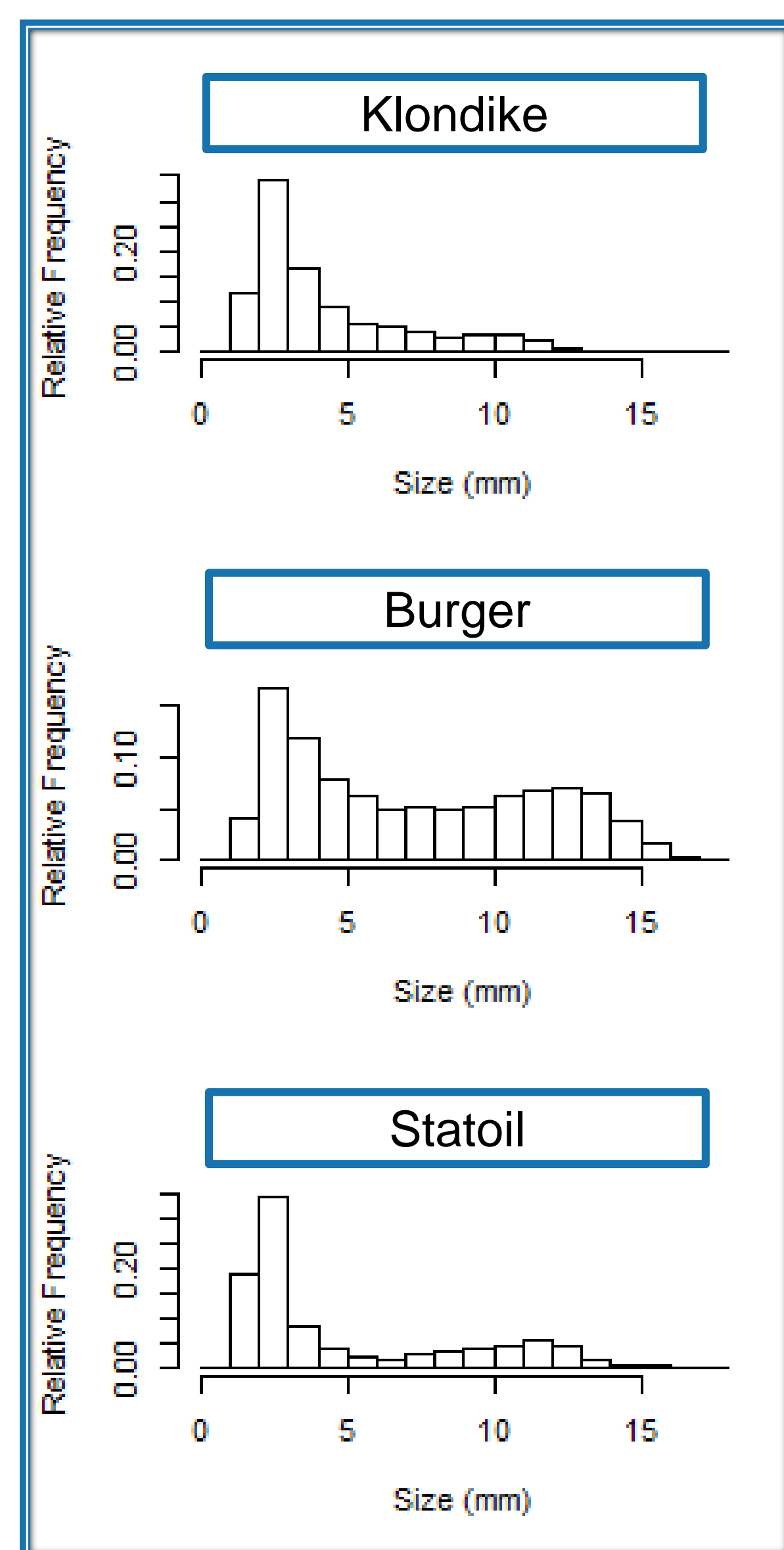
Introduction

The Chukchi Sea is undergoing rapid environmental change, but how benthic fauna are responding to that change is unknown. Population dynamics of the common bivalve *Ennucula tenuis* were investigated during the Chukchi Sea Environmental Studies Program (CSESP) in the northeastern Chukchi Sea, 2008–2013 to better understand temporal variability in biological communities.

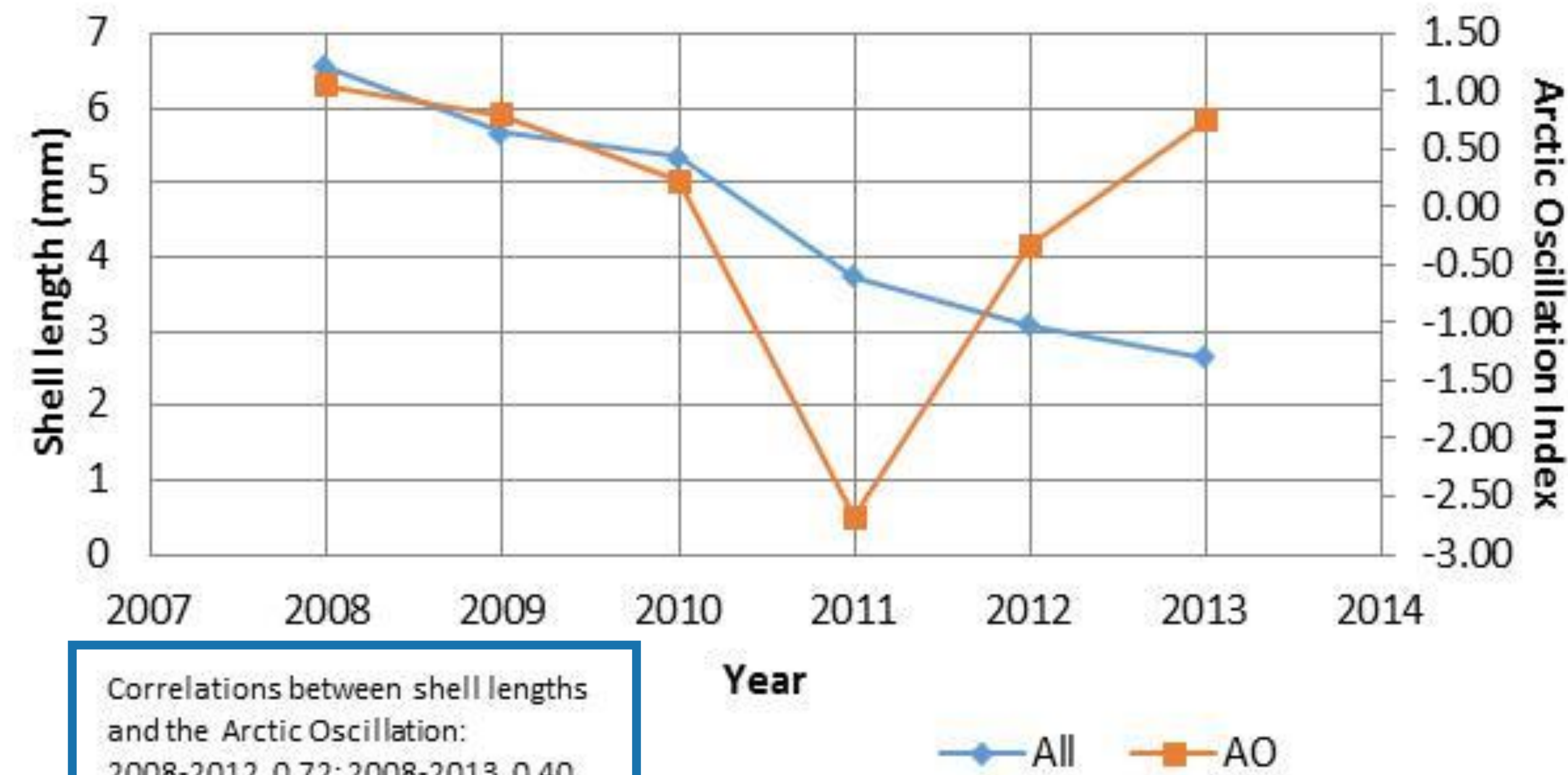
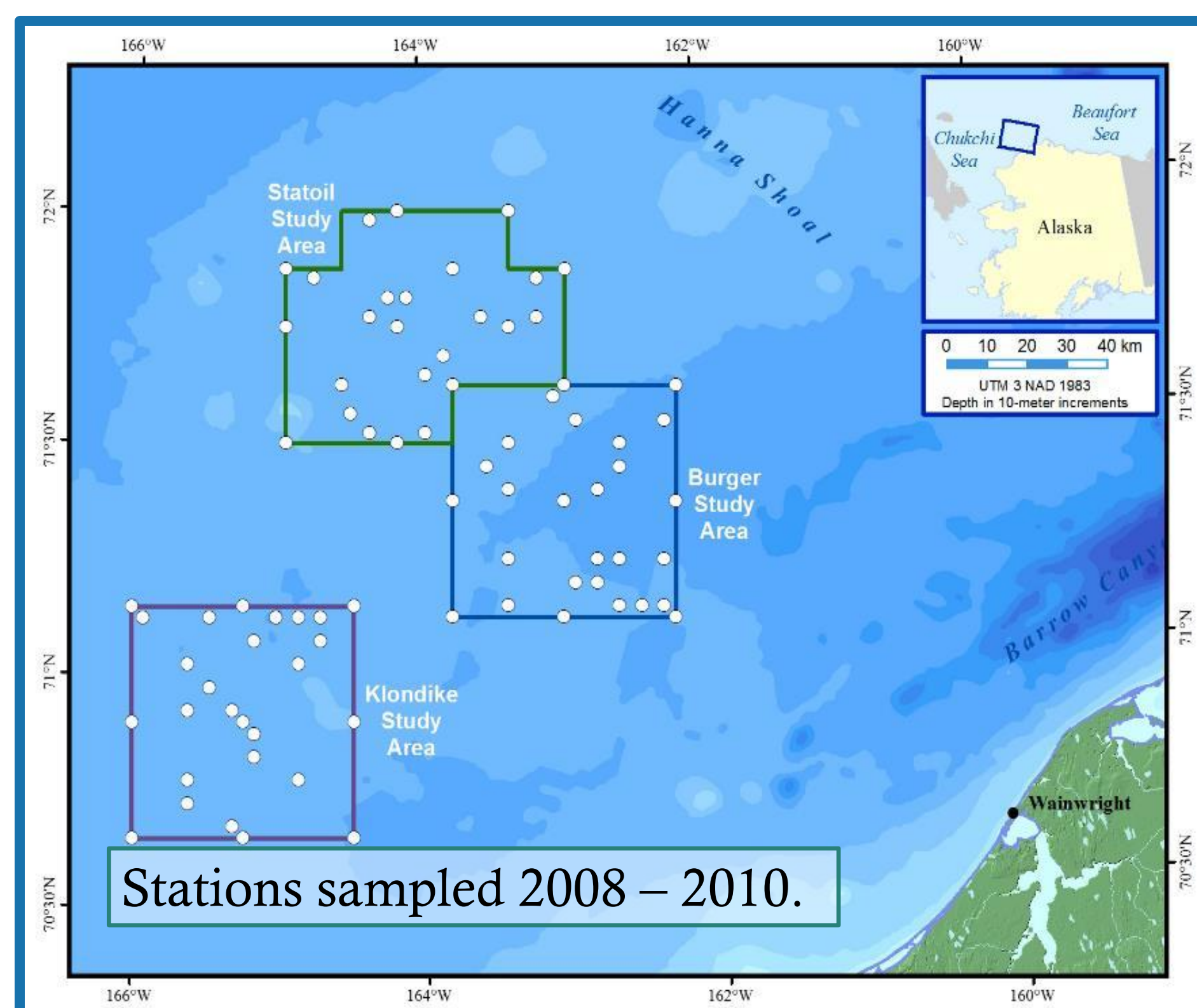
Methods

Macrofauna were sampled for community analyses using a 0.1m² van Veen grab at up to 26 stations in the Burger, Klondike and Statoil study areas, 2008–2013.

Shell lengths of *E. tenuis* were measured in the laboratory using digital calipers to the nearest millimeter.

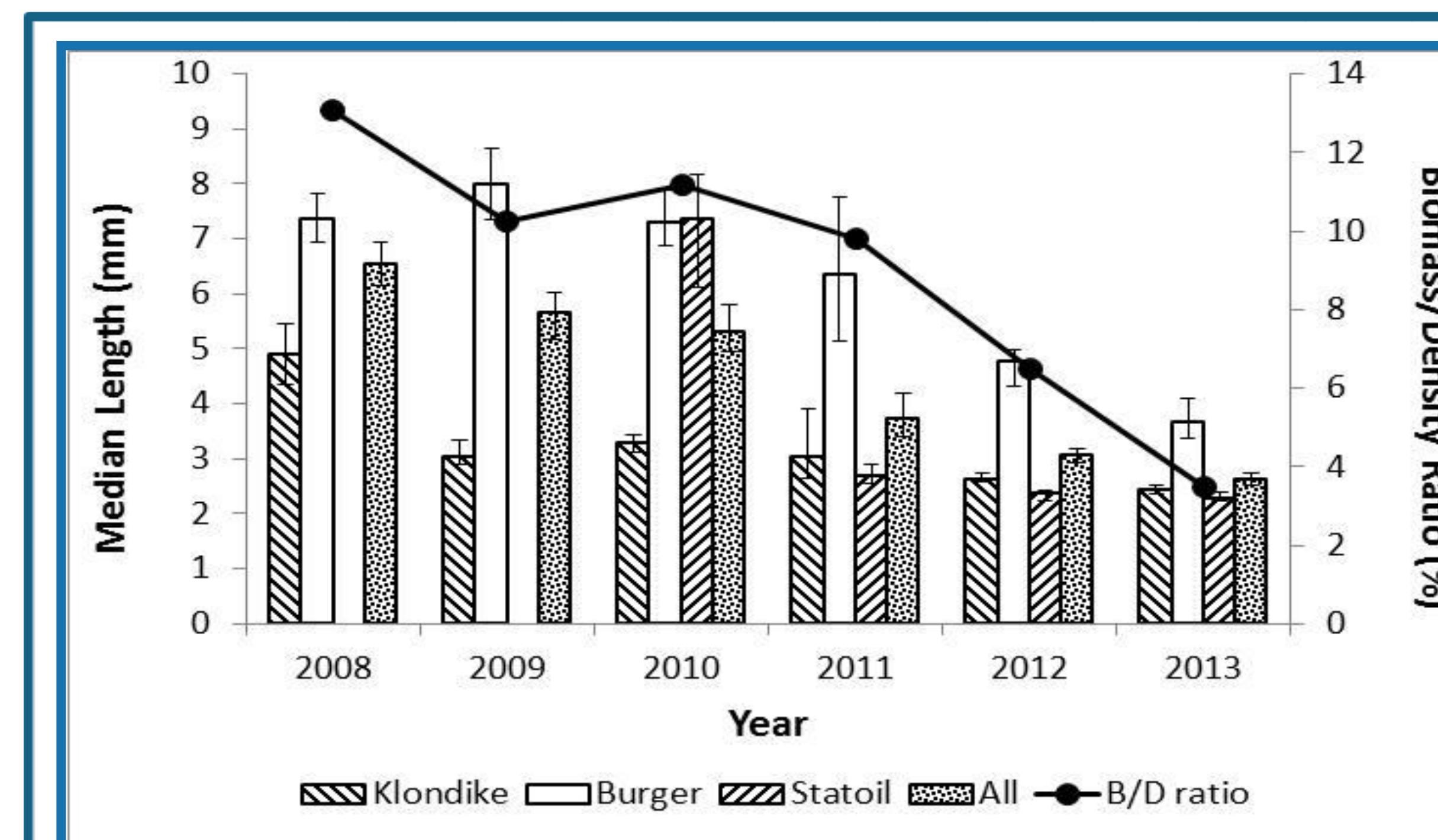


Spatially, *E. tenuis* collected from the Burger study area had greater median shell lengths than those from the Klondike and Statoil study areas in all years.



Conclusion

- Shell lengths and the biomass: density ratio for *E. tenuis* declined suggesting increased numbers of smaller animals rather than adult mortality.
- Median shell lengths were strongly correlated with the prior year's winter-time Arctic Oscillation.
- The high macrofaunal community variability and population-level variability for *E. tenuis* in the study area reflect high ecosystem variability.



Temporally, median shell lengths declined from 2008 to 2013 and length-frequency histograms suggested increased proportions of small (juvenile) *E. tenuis*.

Acknowledgments

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